

SUNNYWAY TECHNOLOGY(CHINA)

ANTENNA SPEC

Customer name: Yuan Ding	Entry name: S2	
Working band: 2400-2500MHZ		
Motherboard version: S2 MAIN V1.2 20240726		
Sunnyway Material specification		
Specification type	Sunnyway number	Customer number
WIFI antenna	SZ245291B98	011402.0007

Revision history			
Date of preparation/change	Change content	Altered person	Edition
2024.12.02	New issue	Xu Wei	A

Sunnyway Countersign column				
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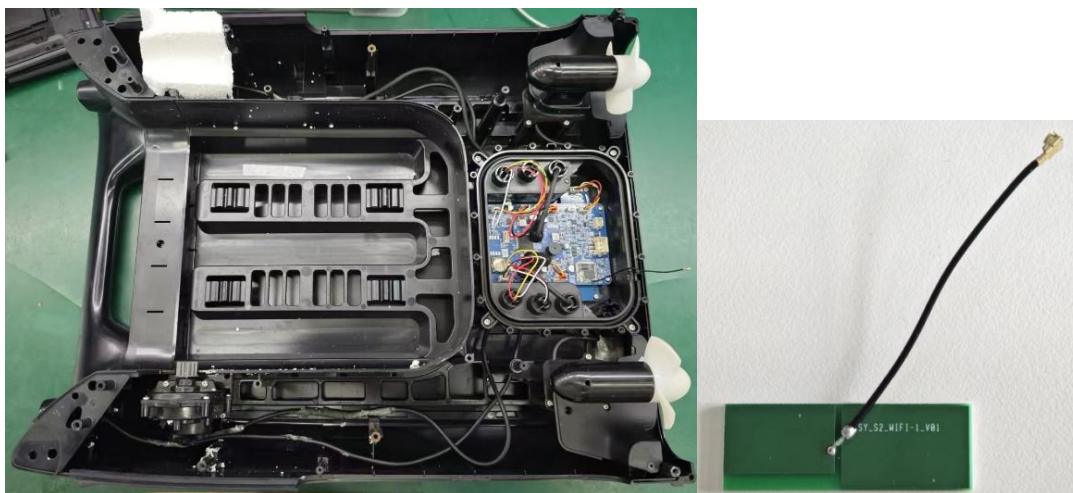
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1. Project information

1.1 Mockup picture

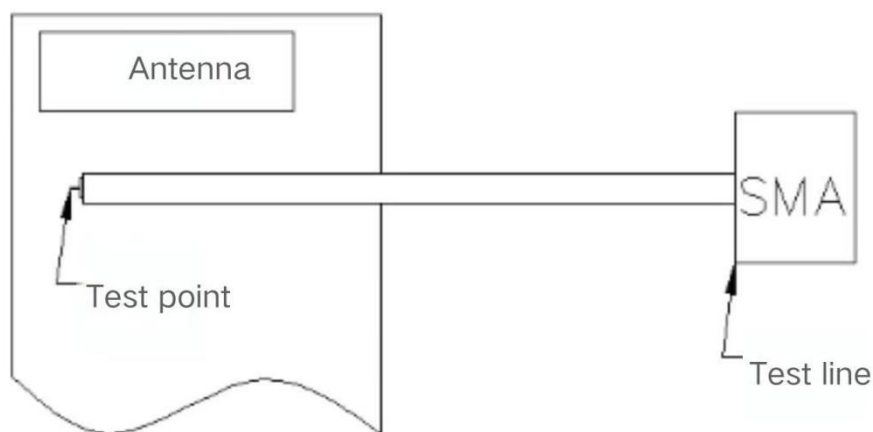


Note: The customer finally verifies the antenna performance and keeps the phone in our company for at least one year, which is convenient to analyze and solve the abnormal situation in the antenna

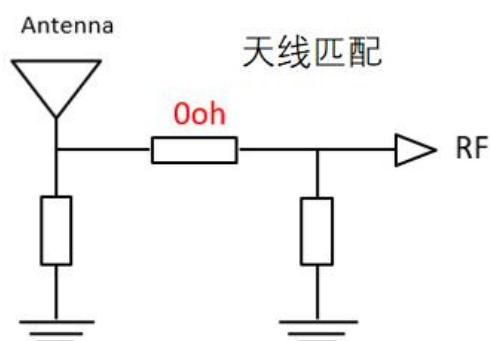
2. Test fixture

Objective: To test the passive parameters of antenna as accurately as possible;

Manufacturing method: The machine tool uses a 50 ohm coaxial cable, one end of which is connected to the test point at the rear end of the matching circuit of the machine board (front end of the RF test hole), and the other end is connected to SMA connector. The schematic diagram is as follows.



3. Matching circuit



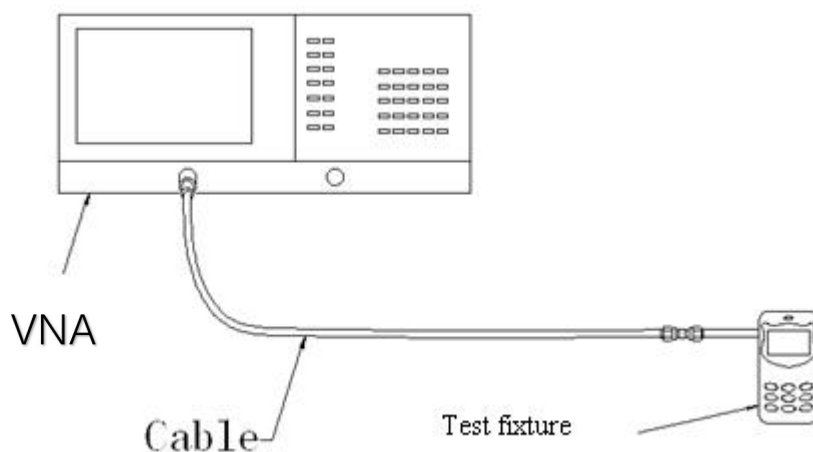
4. Antenna passive testing data

3.1 S11 Description of the test method

Test the equipment: Vector network analyzer (Agilent E5071C)

Test methodology: Use a 50 ohm CABLE cable to export from the instrument test port, use the calibration piece to calibrate and connect the SMA connector of the test fixture, and record the return loss and standing wave ratio corresponding to the relevant frequency point.

Below is a schematic picture of the test:



Test schematic diagram

3.2 S11 Test parameters

频率 (MHZ)	2400	2450	2500
WIFI1 驻波比	1.28	1.20	1.29

VSWR



5. Antenna active testing data

4.1 Test the environment

Test the system: Multi-probe OTA measurement system (XH-IoT)

Test the environment: Temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$

Test the equipment: When testing passive data, use the network analyzer R&S ZND/ Agilent E5071C
When testing active data, use the Agilent 8960/CMW500/SP9500E/SP8315

OTA实验室



综测仪器



SP9500-CTS-5G



CMW500



SP8315 NB-IoT
/eMTC

其他设备



OTA head hand



OTA ear hand



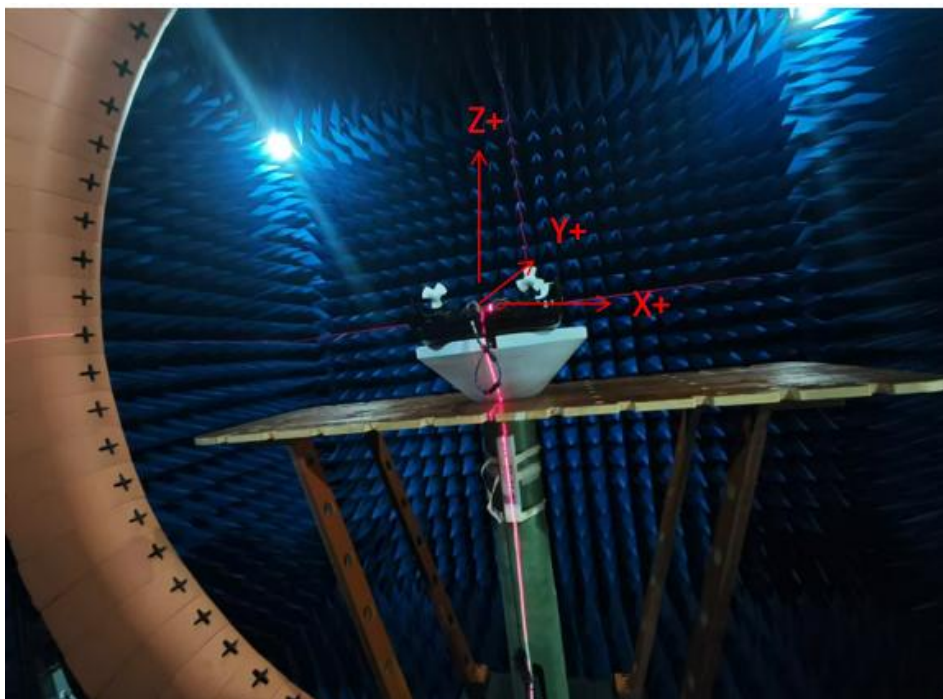
OTA arm hand

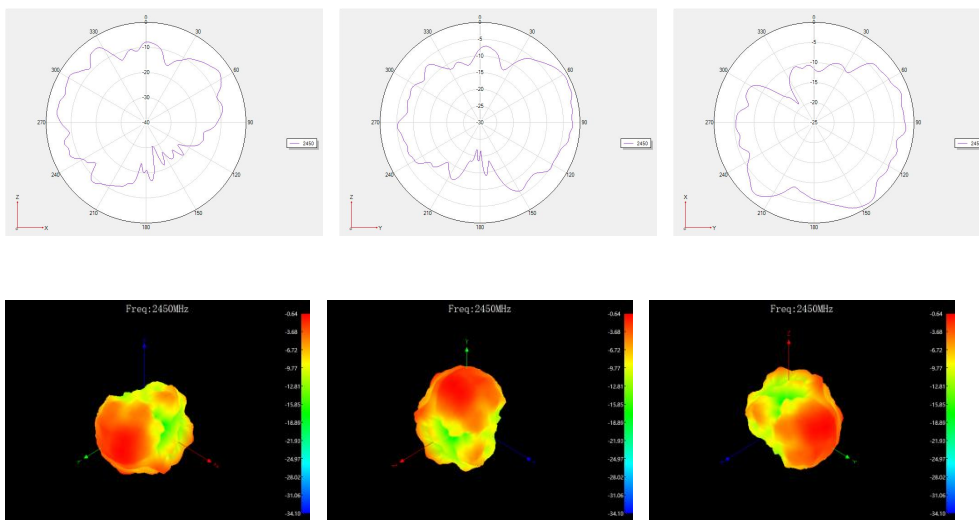
4.2 OTA Passive testing data

Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	0.36	55.46
2410	0.83	53.84
2420	0.3	56.49
2430	0.97	52.84
2440	0.79	54.08
2450	0.64	55.98
2460	1.06	52.97
2470	0.56	57.02
2480	0.81	53.36
2490	0.62	53.46
2500	0.19	55.21

6. Environmental treatment methods

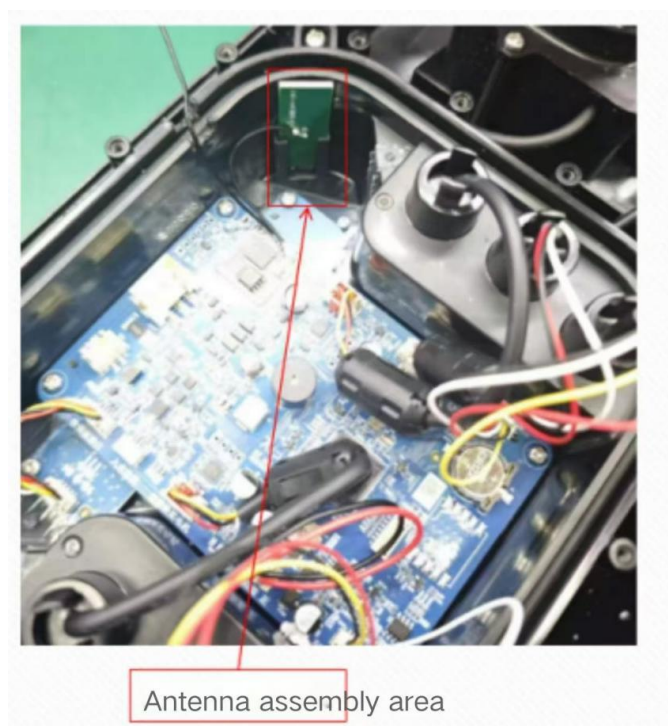
If antenna treatment is not added, it can be treated according to the environment of pilot production machine.





7. Environmental handling assembly picture

No environmental treatment for the whole machine



8. Standard for mass production antennas

When the antenna is mass-produced, the VSWR is used as the mass production test standard.

According to the differences in the project itself, the following criteria are given:

Freq. (MHz)	Mass production standards
2400-2500Mhz	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) + 0.4$

9. Packaging method

